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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,771	02/21/2006	Philippe-Luc Bres	4702-39	6682
23117 7590 04/01/2011 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
HINDENLANG, ALISON L				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/568,771

Applicant(s)

BRES ET AL.

Examiner

ALISON HINDENLANG

Art Unit

1744

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 6 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15, 18-24, 27 and 29 is/are pending in the application.
- 4a) Of the above claim(s) 1-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15, 18-24, 27 and 29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-945)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This is a first action after RCE. Claims 1-14 remain withdrawn while claims 15, 18-24, 27 and 29 are examined below.

Claim Objections

1. Claim 18 is objected to because of the following informalities: Claim 18 appears twice in the claim set filed 02/27/2011. At the bottom of page 4, it is listed that claims 16-18 are cancelled. At the top of page 5, claim 18 is presented. Examiner considers the statement at the bottom of page 4 to be a typo which should read –16-17 (canceled) -- . Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 15, 18-24, 27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carlier (US 6271272 of record) further in view of Harclerode (US 5240657) and Berghmans (US 6538042 of record) as evidenced by "Paraffin" (www.wikipedia.com) and "Primol 352" (www.protoninter.com).

5. With respect to claim 15, Carlier teaches:

Pre-expanded beads having a bulk density chosen from a range of from 40 to 190 g/l ("before molding, the expanded beads generally have a bulk density of 7 to 50 kg/m³", column 11, lines 38-39) and containing by weight:

(a) 100 parts of a polymer of styrene, ("100 parts by weight of the styrene polymer", column 11, lines 30-31) having a mean molecular mass by weight Mw chosen from a range of from 180,000 to 250,000 ("the weight-average molecular mass, Mw, of the styrene polymer generally lies between 150,000 and 300,000", column 5, lines 23-24) ...

(b) from 0.5 to less than 3.0 parts of at least one blowing agent and ("from 0.5 to 6 parts by weight of the blowing agent", column 11, lines 31-32)

(c) from 0 to 0.4 part of at least one plasticising agent, ("from 0.1 to less than 1.0...of the petroleum wax", column 11, lines 32-34) ...

(d) less than 400ppm of residual styrene monomer ("low residual monomer content...les than 800 ppm or even 600ppm", column 5, lines 26-30)

wherein the pre-expanded beads are expandable. ("materials obtained ... from the expanded beads mentioned above, may be expanded moulded parts of any geometrical shape and of any volume", column 11, lines 40-43)

6. Carlier does not specifically teach a blowing agent composition at the pre-expanded stage or explicitly teach that the pre-expanded beads would be capable of further expansion, however examiner considers that these limitations would inherently be met as evidenced by Harclerode which is used as evidence only in response to applicants argument regarding these points.

7. Harclerode shows that only a small amount of blowing agent is lost in a typical expansion process (example 16, column 24, line 54 to column 25, line 15, Table 2) and that a significant amount of blowing agent remains even after a polystyrene bead has been pre-expanded and subsequently molded (table 2). Thus a pre-expanded bead with the blowing agent composition taught by Carlier would inherently retain enough blowing agent after a pre-expansion step to meet the limitation of the instant claim.

8. Also, the presence of remaining blowing agent indicates that the bead would be capable of additional expansion. Further more Harclerode also teaches that "molding is effectuated by placing preexpanded beads into a mold, closing the mold so that a substantially confined volume is produced and thereafter further heating the preexpanded beads so that they further expand and substantially fill the volume within the mold and fuse" (column 14, lines 25-30) showing that it is known in the art that preexpanded beads are capable of further expansion.

9. Carlier does not teach a specific Mw:Mn ratio or the use of oil as a plasticizing agent.

10. In the same field of endeavor, expanded polystyrene, Harclerode further teaches the use of polymers which have "a weight average molecular weight of from greater than 180,000 to about 300,000...a Mz:Mn of from about 2 to about 4.5" (column 3, lines 17-19) and "a polydispersity of from about 1 to less than 2.5" (column 17, lines 42-43) for the purpose of producing expanded beads. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a polymer with a ratio as taught by Harclerode for the purpose of producing expanded beads.

11. In the same field of endeavor, expanded polystyrene, Berghmans teaches the use of white oil as a plasticizer (column 6, line 23). Examiner considers that it would have been obvious to one of ordinary skill in the art to substitute white oil as taught by Berghmans for the petroleum wax (paraffin wax, column 5, lines 61-65) Carlier because they are recognized equivalents from the same family of materials as evidenced by "Paraffin" (page 1, paragraph 0002). It has been held to be obvious to one of ordinary skill to pursue known options when it does no more than yield predictable results. *KSR Int'l Co. v. Teleflex Inc.*, 82 USPQ2d 1385.

12. Furthermore, examiner considers that the instantly claimed oil properties are the standard properties of mineral oils as evidenced by "Paraffin" and "Primol 352". "Paraffin" teaches that mineral oils are a mixture of heavier alkanes with a density of around 0.8 g/cm³. (page 2, paragraph 0001) "Primol 352", in the table on page 4, teaches a mineral oil with a hydrocarbon average, dynamic viscosity and density as instantly claimed. Therefor the combination as applied above teaches the use of an oil with the instantly claimed properties as a plasticizer.

13. With respect to claims 18 and 29, Carlier further teaches that a mixture of n-pentane and iso-pentane maybe used as the blowing agent (column 5, lines 31-35).

14. With respect to claims 19 and 20, Carlier teaches "from 0.5 to 6 parts by weight of the blowing agent" (column 11, lines 31-32).

15. With respect to claim 21 and 22, Carlier further teaches "from 0 to 1.0 part by weight of a nucleating agent chosen from synthetic Fischer-Tropsch or polyolefin waxes" (column 4, lines 35-36).

16. With respect to claim 23, Carlier further teaches "the beads of expandable styrene polymer may have a diameter of 0.2 to 3.0 mm" (column 5, lines 4-5).

17. With respect to claim 24, Carlier teaches "the expanded beads generally have a bulk density of 7 to 50 kg/m³" (column 11, lines 38-39).

18. With respect to claim 27, as explained in the rejection of claim 15, the preexpanded beads taught by Carlier would retain sufficient blowing agent to be capable of further expansion without adding new blowing agent.

Response to Arguments

19. Applicant's arguments filed 02/27/2011 have been fully considered but they are not persuasive. Applicant argues that Carlier teaches that reducing blowing agent concentration requires increasing plasticizer concentration and that both of these levels fall outside of the claimed ranges (page 9, lines 7-15).

20. Examiner finds this argument to be unpersuasive. It has been held that disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or non-preferred embodiment. (*In re Susi*, 169 USPQ 423) Also, it has been held that a reference is not limited to its preferred embodiment, but must be evaluated for all of its teachings, including its teachings of non-preferred embodiments. (*In re Burckel*, 201 USPQ 67). While the specific examples in Carlier may not fall within the instantly claimed ranges, Carlier as applied above teaches a blowing agent content from 0.5 to 6 parts by weight and a plasticizing agent content from 0.1 to less than 1.0 (column 2, lines 31-34) both of which include the instantly claimed ranges. Further

more Carlier teaches "a preferred composition according to the present invention is a composition having a low content of blowing agent which, in this case comprises: from 2 to less than 5 parts by weight of the blowing agent; and from 0.2 to 0.9 part, preferably from 0.3 to 0.6 part by weight of the petroleum wax" (column 5, lines 40-47).

21. Applicant further argues that Carlier considers 600 ppm to be very close to the smallest amount of residual styrene monomer which can be achieved. (page 9 to page 10).

22. Examiner finds this argument to be unpersuasive. Carlier, as applied above, teaches "a low residual monomer content...in particular less than 800 ppl or even 600 ppm" (column 5, lines 26-30). Examiner considers this to mean that Carlier teaches reducing the monomer content as far as possible even to less than 600 ppm which includes the instantly claimed "less than 400ppm".

23. Applicant's arguments regarding the plasticizer features added by current amendment not being taught by Carlier are addressed in the rejection above.

24. The art of record (Berghmans) teaches the use of oils as a plasticizer. Examiner considers that the substitution of mineral/white oil for petroleum/paraffin wax would be obvious to one of ordinary skill in the art as they are evidenced to chemically similar and member of the same family ("Paraffin"). Examiner further considers that the claimed oil properties are inherent to/standard for mineral and white oils as evidenced ("Paraffin" and "Primol 352").

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALISON HINDENLANG whose telephone number is (571) 270-7001. The examiner can normally be reached on Monday to Friday 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yogendra N Gupta/
Supervisory Patent Examiner, Art Unit 1791

ALH